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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/635,615 | 08/07/2003 | Chong-Oh Kim | P24028 | 9591 |
| 7055 7590 06/13/2007 GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191 | | | EXAMINER SILVERMAN, ERIC E | |
| | | | ART UNIT 1615 | PAPER NUMBER |
| | | | NOTIFICATION DATE 06/13/2007 | DELIVERY MODE ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com
pto@gbpatent.com

Office Action Summary

Application No.

10/635,615

Applicant(s)

KIM ET AL.

Examiner

Eric E. Silverman, PhD

Art Unit

1615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 2-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 10 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 11-6-03
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION***Election/Restrictions***

Applicant's election with traverse of Group I, claims 1 – 5, 10 and 11 in the reply filed on 5/30/2006 is acknowledged. The traversal is on the ground(s) that the Office action did not specify why a serious burden exists in searching more than one invention, and Applicant's allege that no such burden exists. This is not found persuasive because serious search burden was shown in the office action at least by showing that the two Groups are in different classes and subclasses. Absent any evidence to support the allegation that no serious burden exists, Applicants' argument is not persuasive in view of the different classification of the Groups.

The requirement is still deemed proper and is therefore made FINAL.

Claims 6 – 9 are **withdrawn** from consideration as being drawn to a non-elected invention.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 10 and 11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. **This is a written description rejection.**

Applicants' have not described the claimed magnetic nanoparticles wherein radioactive copper is a component of the magnetic nanoparticles in a manner sufficient to show possession of the entire genus thereof. Applicants' have described only one species of magnetic nanoparticle, namely the $\text{Cu}_x\text{F}_{1-x}\text{O Fe}_2\text{O}_3$ nanoparticle, in their specification. There is nothing in the specification to indicate that Applicants' had possession of nanoparticles containing any other copper or copper compound. Further, there is nothing in the specification or in the art of record to indicate that the disclosed species is representative of all radioactive copper containing nanoparticles. Thus, the artisan would recognize that Applicants' had possession of $\text{Cu}_x\text{F}_{1-x}\text{O Fe}_2\text{O}_3$ nanoparticles, but not of other nanoparticles.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 – 5, 10 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation of "the radioactive copper" in claim 1 lacks proper antecedent basis.

Claim 2 recites the structure $\text{Cu}_x\text{F}_{1-x}\text{O Fe}_2\text{O}_3$ without defining the variable x , which renders the claim indefinite. Claim 2 also recites "is obtained with synthesis of $\text{Cu}_x\text{F}_{1-x}\text{O Fe}_2\text{O}_3$ by chemical reaction of Cu^{2+} solution with the solutions of Fe^{2+} and Fe^{3+} ". It is not clear if the step language "obtained with" is meant to indicate that the claim is a product-by-process claim. If Applicants desire to claim a product by process,

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then clear method steps should be recited. Further, it is not clear what is meant by "with the chemical reaction of..." Did applicants intend "obtained by reacting..." or something else? Also, there is no antecedent basis for "the solutions of Fe²⁺ and Fe³⁺."

The remaining claims are rejected for ultimately depending on one of these claims without resolving all of the issues relating thereto.

Claim Rejections - 35 USC § 102

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1, 10, and 11 are rejected under 35 U.S.C. 102(a) as being anticipated by US 7,138,103 to Goldenberg et al.

Goldenberg discloses a construct comprising a protein (proteins have surfactant properties) bound at one end to a liposome (nanoparticle) and a radionucleotide, which in some embodiments is radioactive copper (see claims 1, 7, and 29 – 31). These constructs are present in kits, where they are dissolved in water (the magnetic fluid – see claims 33 – 36). Claims 10 and 11 merely recite a future intended use for the product (a therapeutic and diagnostic agent for cancer, respectively), which carries no patentable weight.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 2005/0085417, US 2004/0248856, US 2006/0286379, Sincai et al in Journal of Magnetism and Magnetic Materials 225 (2001) 235-240, Sieben et al in Journal of Magnetism and Magnetic Materials 225 (2001) 175-179, Kuznetsov et al in Journal of Magnetism and Magnetic Materials 194 (1999) 22 – 30, Kwon et al in Korean

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Journal of Materials Research Vol. 12 (3) 2002 pp215 (English translation prepared by the USPTO).

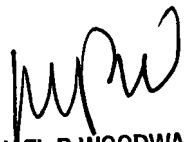
No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric E. Silverman, PhD whose telephone number is 571 272 5549. The examiner can normally be reached on Monday to Friday 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward can be reached on 571 272 8373. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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